THE PRIMARY LAW OF VALUE OR PRICE.

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THE PRIMARY LAW OF VALUE OR PRICE.

Reasons Based Upon Statistical Data Showing that Economic Cost of Production—not the Ratio of Demand and Supply—is the Primary Law which Regulates and Determines the Respective Ratios and Prices at which the Precious Metals and all other Commodities and Services Exchange with each other.

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(Tables and Diagrams.)

Read September 9th, 1895.

Introductory.

No field of inquiry has suffered so much from the lack of uniformity, precision, and proper classification and definition of terms as that branch of art or science which relates to Social Economics. Perhaps these imperfections were unavoidable in the early stages of investigation of matters so complex and variable, and may have been perpetuated by the idea that the popular appreciation of important Social and Economic questions might be aided by the retention of words in common use. The terms Capital, Utility, Wealth, Value, Price, Rent, Profit, Wages Fund, Wages, Interest, Demand, Supply, Cost of Production are of this class, and are still frequently a source of confusion because of the very different meanings which different writers loosely attach to them. Professor Marshall and Gunton, among modern Economists, have done good service in giving greater precision to our language when making use of such generic words, by the adoption of requisite qualifying terms, denoting the specific sense in which the original, or root, term is to be understood.

The terms thus adding greater precision to Economic language are now becoming better understood, and prevent much of the confusion in discussion which formerly was almost unavoidable. The following is a list of the more important of these specific terms now in constant use among Economic students :—

Wealth.—*Wealth in Exchange, or Exchange Wealth, Social Wealth, National Wealth, Cosmopolitan Wealth, Capital Wealth, Consumable Wealth.*

Capital.—*Individual Capital, Trade Capital, Social Capital, Consumption Capital, Auxiliary Capital, Potential Capital, Circulating Capital, Fixed Capital, Personal Capital.*

UTILITY.—*Total Utility, Marginal or Final Utility.*

VALUE.—*Price, Exchange Value, Money Value, Unit of Value, or Ratio or Measure of Exchange, Economic Price, Present Value, Deferred Value, Capital Value, Annual Value.*

RENT.—*Ground Rent, Building Rent, Producer's Rent, Ability Rent, Wages-earner's Rent, Economic Rent, Quasi-Rent.*

PRICE.—*Economic Price, Equilibrium Price, Monopoly Price, Esau Price, Fancy Price, Famine Price, Robbery or Violence Price, the Price of Honour or Virtue, Final Margin of Purchasing Price.*

WAGES.—*Nominal or Money Wages, Real Wages, or Purchasing Power.*

The greater precision which the use of these specific terms, as defined by Economists, affords in discussion is invaluable, and has been the means of clearing up many difficulties.

Notwithstanding the advantages which improved nomenclature have gained for us, there are several important questions regarding which there still exists many conflicting opinions. One of these questions, upon which many controversies hang, is "The Primary Law which regulates and determines the ratios which Economic Commodities and Services exchange with each other;" in other words, "The Primary Law of Price or Value." This is the subject which I have selected for my discourse this evening, and although in the short space which I have at my disposal I can only touch upon the leading features of the question, I hope, by the aid of statistical data and other illustrations, to demonstrate the truth of the assertion which I have ventured to make at the beginning of this paper, viz., "that economic cost of production—not the illusive and indefinite something called the ratio of demand and supply—is the primary law which regulates and determines the respective ratios and prices at which the precious metals and all other commodities and services exchange with each other."

But first it may be useful to inquire :

HOW DOES THE GERM OF ECONOMIC PRICE OR VALUE ARISE ?

At this stage we may with advantage postpone the consideration of the causes which determine the exact exchange ratios or prices of services and commodities, and confine our attention to the investigation of the origin of the initial element of price or value *per se*, irrespective of amount or ratio.

Although Ricardo and Adam Smith did not at first sufficiently qualify their observations to avoid adverse criticism, it is now manifest that their ideas regarding the origin of price and equivalence of exchange require very little modification to be accepted as true by the most advanced economic thinkers of the present day. If we simply substitute "*cost of man's services*," which embraces quality and effectiveness of labour, in place of their original expression "*quantity of labour*," even Gunton, the most recent of thorough exponents of the true origin of the "Primary Law of Price," would give assent to Ricardo's original statement regarding "the equivalence of exchange value," or, as he (Ricardo) states it, "the rule which determines how much of one (commodity) shall be given for another depends almost exclusively on the comparative *quantity of labour* expended on each." Substitute cost of man's service "for *quantity of labour*," and we have the true explanation of the origin of economic price or the "primary law which regulates and determines the respective ratios and prices at which . . . commodities and services exchange with each other."

Ricardo very clearly and succinctly establishes this fundamental truth as to the origin of value and ratio of exchange in his Principles of Political Economy (chap. i. pp. 9, 10. M'Culloch's new edition of "The Works of David Ricardo," 1888) in the following statement:—

"There are some commodities, the value of which is determined by their scarcity alone. No labour can increase the quantity of such goods, and therefore their value cannot be lowered by an increased supply. Some rare pictures, scarce books and coins, wines of a peculiar quality, which can be made only from grapes grown on a particular soil of which there is a very limited quantity, are all of this description. Their value [a] is wholly independent of the quantity of labour originally necessary to produce them, and varies with the varying wealth and inclination of those who are desirous to possess them."

"These commodities, however, form a very small part of the mass of commodities daily exchanged in the market. By far the greatest part of these goods (*fully 99 per cent.*) which are the objects of desire are procured by labour; and they may be multiplied, not in one country alone, but in many, almost without any assignable limit, if we are disposed to bestow the labour necessary to obtain them."

"In speaking, then, of commodities, of their exchangeable value, and of the laws which regulate their relative prices, [b] *We mean always such commodities only as can be increased in*

a. *Fancy Price*, as distinguished from *Economic Price*.

b. Fully 99 per cent. of all commodities in exchange fall within this definition, and are governed by the Primary Law which determines *Economic Price*.

quantity by the exertion of human industry, and on the production (and supply) *of which competition operates without restraint.*" [a]

Ricardo having thus clearly defined the particular domain in which the Primary Economic Law of Price operates, and to which all illustrations which relate to Value and Price should be strictly confined,[b] proceeds to disclose the entry of the basal element of all value and price, which, when incorporated in any material substance by means of detached claim or title, such as money wages or other recognised medium of claim, is thereafter indissolubly united with it as the almost sole measure of its Exchange Value. This basal element of value he discovers in "the comparative quantity (cost?) of labour expended on each" particular commodity, or in maintaining any particular kind of labour service.

Thus he goes on to observe:—"In the early stages of society the exchangeable value of commodities, or the rule which determines how much of one shall be given in exchange for another, depends almost exclusively on the comparative quantity (cost?) of labour expended on each."

The Elemental Ratio or Unit of Exchange.—Ricardo then proceeds to show, by a quotation from Adam Smith, which he accepts, that "The real price of everything, what everything really costs to the man who wants to acquire it, *is the toil and trouble of acquiring it.* What everything is really worth to the man who has acquired it, and who wants to dispose of it, or exchange it for something else, is the toil and trouble *which it can save to himself*, and which it can impose upon other people. . . . . Labour was the first price—the original purchase-money that was paid for all things." Again, "in that early and rude state of society which precedes both the accumulation of stock and the appropriation of land, the proportion between the quantities of labour necessary for acquiring different objects *seem to be the only circumstances which can afford any rule for exchanging them for one another.* If among a nation of hunters, for example, it usually cost twice the labour to kill a beaver which it does to kill a deer, one beaver should naturally exchange for or be worth two deer. It is natural that what is usually the produce of two days' or two hours' labour

a. Where abnormal conditions come in, crippling the reasonable choice or freedom of one of the parties—a forced or absolutely necessary exchange—such as in the exchange of Esau's birthright for a mess of pottage—it might be convenient to define all such exchange value as The *Esau Price* or the *Final Margin of Purchasing Power.*

b. The confusion and opposition of Jevon's and other opponents to Ricardo's theory of "The Primary Law of Economic Price" is due largely to a failure on their part to confine their references and illustrations to the true domain in which the Primary Economic Law of Price operates, and to which Ricardo insisted that it should be confined.

should be worth double of what is usually the produce of one day's or one hour's labour."

In quoting Adam Smith's views, with full approval, Ricardo concludes:—"That this is really the foundation of the exchangeable value of all things, excepting those which cannot be increased by human industry, is a doctrine of the utmost importance in political economy; for from no source do so many errors and so much difference of opinion in that science proceed, as from the vague ideas which are attached to the word value."

The most important corollary to be drawn from such a doctrine is, that all natural elements and their compounds, which form the substance of commodities, whether rare as gold, silver, or tin; or common as coal, iron ore, salt, or water, are, of *themselves*, free gifts of nature, and do not form any part of Value or Economic Price. Man cannot create the elements of material substances, but by his forethought, intelligence, and labour, he can modify and transport, and can provide favourable conditions for the natural increase of specific forms of utility. The latter service of man and its extent merely constitute the *measure of the quality* we otherwise call *value or price* in the particular compounds of natural elements in which, by the laws of Social Economy, it has become so closely incorporated as to be confounded with some supposed intrinsic value in the natural substance *per se*.

The phrase "free gifts of nature" by most people is usually restricted to those things—like pure common air, rain, and sunshine, so necessary to man's life and comfort—which are obtained directly by natural means without the intervention of other men's services; but the acceptance of the doctrine of the Primary Law of Economic Price or Value leads us a step further, and compels us to concede that although all monopolised natural substances in which man's services are incorporated are inseparably associated with Economic Price or Value, the natural elements themselves do not enter into it in any degree whatever; and, therefore, the rarer natural element, *gold, per se*, adds as little to economic price or value as the more common elements, *carbon, hydrogen, oxygen, silica, sodium, chlorine, nitrogen*, etc., do to compounds of common substances, such as coal, common salt, grain, and other food products.

Qualifications to be Admitted.

There are some objections which may be raised, here, against the doctrine that Cost of Production is the Primary Law of

Price, based upon the following considerations, which it may be profitable to discuss :—

First, it is admitted generally as an axiom in economics, that *in the same market there can only be one price for specific articles of the same quality.*

(1) Seeing that the same area of good land may yield A double the quantity of produce grown by B on poor land without any difference in the actual cost of production. How, in the face of "one price for the specific articles of the same quality," can this effect be reconciled with the doctrine that Cost of Production is the Law of Price ?

(2) A similar objection applies to cotton cloth and other manufactures. A, *e.g.*, by the use of superior appliances, may produce four yards of similar cotton at the same cost as it would take B to produce three yards.

(3) Similarly in respect of cost of labour services : Two carpenters of equal skill working at the same bench receive the same daily wages. The maintenance of A with a family to support involves, perhaps, three times the cost of B, a single man, even with the same standard of living.

All these examples would have great force as bearing against the Primary Law of Price were it not that the word "Primary" does not exclude the conception of minor influences which qualify and modify to some extent the operation of the Primary Law. But even the examples given are perfectly reconcilable with the doctrine when stated more completely. For Cost of Production, *i.e.*, economic cost, ignores the variations of actual cost among different producers of the same class of articles as the individuals of the same class working under the greatest disadvantages are the sole determinants of the uniform market price of the common product.

Thus, as regards the price of agricultural products, the normal rate of wages for each class of occupation, as well as the price of manufactured products, are all alike really governed by the same economic law, namely, "*the cost of producing the most expensive portion of the supply necessary to satisfy the same market.*"

The difference of actual cost of production between those in the same occupation, who are working at a greater advantage and those at the greatest disadvantage, is absorbed by the former as an extra reward for services. In the case

of Landowners it constitutes Economic Rent; in Manufacturing and other industries, and in Wage-earning Services it is termed Surplus Profit, or Quasi-Rent.

In none of these cases does the Economic Rent or Surplus Profit so absorbed add in any degree to Economic or Market Price, for the latter is solely determined by the respective representatives of the groups of the same class working under the greatest disadvantage; that is, at the no-rent or no-surplus-profit stage.

I am indebted to Gunton for the following tabular illustrations, which help to reveal more clearly how the marginal differences of cost of production between the same class of producers or workers are absorbed by the more fortunately circumstanced, in the shape of Economic Rent or Surplus Profit, and how the circumstances of the least favoured or "most expensive portion of supply" alone determine the market price.

The Law of Rent. (Gunton.)

"Under conditions of Economic Freedom the rent o land used for any purpose tends to equal the difference between its productive utility and that of the poorest land used for the same purpose in that community, or which contribute to the necessary supply of the same market."—GUNTON.

ILLUSTRATION.

RENT PER ACRE.	SURPLUS PER BUSHEL.	PRICE PER BUSHEL.	COST PER BUSHEL.	BUSHELS PER ACRE.	
Dollars.	Cents.	Dollars.			
6.00	25	1.	Minimum Cost ... 75 c.	24	D
4.00	18	1.	" " ... ... 82 c.	22	C
2.00	10	1.	" " ... ... 90 c.	20	B
0.00	00	1.	Maximum Cost ... ... 100 c.	18	A

The Law of Wages. (Gunton.)

"The law then may be correctly stated thus :—

"The rate of wages in any country, class, or industry constantly tends towards the cost of living of the (average of) most expensive families who furnish a necessary part of the supply of labour in that country, class, or industry."—GUNTON.

ILLUSTRATION.

CENTS.	DOLLARS.	DOLLARS.						
0	2	Maximum Cost ...	...	...			2.00	A
5	2	" " ...	...	...		1.95		B
10	2	" " ...	...		1.90			C
15	2	" " ...	...	1.85				D
20	2	" " ...	1.80					E
25	2	Minimum Cost 1.75						F
SURPLUS PROFIT OR SAVINGS.	NOMINAL WAGES.	ACTUAL COST OF LIVING.	COST REDUCED BY CHEAP LIVING.					

SOURCE OF SAVINGS OR SURPLUS PROFIT.

THE LAW OF SURPLUS PROFIT OF MANUFACTURERS.
(*Gunton.*)

"While the dearest capitalist and the dearest labourer both fix the prices for their class, they both occupy relatively opposite positions. The manufacturers who furnish the most expensive portion of the supply of commodities are the poorest and lowest in their class, while the labourers who furnish the most expensive portion of labour-power are the best and highest in their class, as shown."—GUNTON.

ILLUSTRATION.

SURPLUS PROFIT.	PRICE.	ACTUAL COST (Cents).			COST SAVED BY CAPITAL.			
Cents. 1	Cents. 4	Minimum Cost	3					F
$\frac{4}{5}$	4	"	" ...	$3\frac{1}{5}$				E
$\frac{3}{5}$	4	"	" ...		$3\frac{2}{5}$			D
$\frac{2}{5}$	4	"	" ...	...		$3\frac{3}{5}$		C
$\frac{1}{5}$	4	"	" ...	...	...		$3\frac{4}{5}$	B
0	4	Maximum Cost	...	...	...		4	A

SOURCE OF PROFITS.

The illustrations given are of value in giving greater precision to the doctrine of the Primary Law of Price, and helpful in freeing the mind from misconception in the further examination of the rival theory of the Law of Economic Prices, viz., the "Ratio of Demand and Supply." This theory, however fallacious, is plausible, and has the prestige of having been tacitly held or expressly advocated by a very large number of Economists, whose general qualifications are such as to entitle them, at least, to the most respectful consideration, even if their conclusions cannot command assent.

This rival theory claims that Economic Prices are mainly determined and regulated by the varying *Ratio of the Demand and Supply.*

More explicitly. This doctrine affirms[a]:—"(1). That under free competition (*i.e.*, in the absence of arbitrary barriers) there cannot be two prices for the same commodity in the same market"—a proposition common to both of the rival theories; and the same may be affirmed of the next, viz:—(2). That, when the supply and demand are equal, the price is the exact equivalent of the cost of production. The real and fundamental divergence between the rival theories is contained in the third proposition, viz.:—(3.) That the price rises as demand exceeds the supply, and falls as the supply exceeds the demand; and "the rise or fall continues until the demand and the supply are again equal to one another."

The Ratio of Demand and Supply not the Primary Law of Economic Prices.

If the claim that the ratio or relative intensity of Demand and Supply, respectively, is the major influence in determining the rise or fall of Economic Prices over a long course of years, it would need proof to sustain the two following propositions:—

(1) That prices in all cases rise in ratio or proportion as demand exceeds supply in intensity or magnitude, and that, conversely, prices in all cases fall in ratio or proportion as supply exceeds demand in intensity.

(2) That whenever the ratios or intensities over a number of years touch the equilibrium point, that is, are exactly equal, then the price of the particular commodity or service returns to a measure of value which, in itself, is constant and invariable under such conditions.

As regards the first of these postulates, it may be affirmed, with reason, that even if it seems to be true as regards short periods corresponding to the perturbation or fluctuation of

a. Gunton.

seasonal or cosmical influences, it affords no explanation of a general and continuous fall of prices over a large number of years when conjoined with an ever-increasing *real demand*.

Wheat.—Take the commodity *wheat* for example. The absolute measure of the intensity of demand is most surely determined by the extent of its consumption, per head. In the United Kingdom, this intensity of real demand is indicated by the fact that the consumption in the year 1840 amounted to 255lb. per head per year, while its *price* per ton averaged £16·60. The absolute intensity of requirement or demand continued gradually to *increase* to such an extent that in the year 1887 it is indicated by a consumption of 354lb. per head of population, or an increase of intensity of *real demand* equal to 38·82 per cent., while its *price* did not *increase* in the *ratio of real demand*, but actually fell to £8·15 per ton, or a fall of as much as 50·90 per cent., that is, half the price, as compared with the earlier period when the real demand was much less intense.

Meat.—Again we have another anomaly, which, taken with the former instance, is equally unexplainable by what is termed the "scarcity of gold theory of decline of general prices, or by the Law the Ratio of Demand and Supply." Thus in the United Kingdom in the same year, 1840, the average consumption of meat was 87lb. per head, while its market price was £54·5 per ton. Both demand and price gradually increased, *but at very unequal ratios*, until the year 1887, when the average consumption rose to 109lb. per head, or 25·29 per cent. increase, and the market price rose slightly to £58·5, being an increase of only 7·35 per cent.

Average Wages of Agricultural Labour.—A still more remarkable example of inconsistency with either the "Scarcity of Gold" or the Ratio of Supply and Demand theories, and constituting indeed a complete inversion of their theoretical conclusions, is to be found in the United Kingdom, between the years 1840 and 1887, in respect of the rapid fall in demand for agricultural labour generally, associated with not only a gradual *increase* in agricultural labourers' nominal wages, but a still more decided increase in the purchasing power of the same wages.

Thus in 1840 there were 3,400,000 labourers employed in agriculture with average wages at 12s. per week. In 1887, notwithstanding an increase of 38 86 per cent. in the total population, the number of agricultural hands fell to 2,560,000, or a decline of 24·70 per cent., while their nominal wages rose to an average of 15s. per week, or 25 per cent. increase, and while also the real purchasing power *increased* fully 50 per cent. [a]

a. See fuller particulars page 17.

A

A

PROGRESS OF COTTON INDUSTRY IN THE UNITED STATES Between the Years 1830 & 1880

PARTICULARS		1830	1880	Per Centage Increase or Decrease since 1830	
				INCREASE	DECREASE
Establishments	No	801	756		562
Capital Invested	DOLLARS	40,612,984	208,280,346	412	
Ditto per Establishment	"	50,702	275,503	443	
Ditto per Hand	"	653	1,202	85	
Persons employed	No	62,208	172,544	177.4	
Spindles	"	1,246,703	10,653,435	755	
Cloth produced	lbs	59,514,926	607,264,241	920	
Ditto per Hand	"	950.7	3,519.5	276	
Ditto per Spindle	"	47.6	57	19.7	
Ditto per Dollar Capital	"	1.4	2.4	71.4	
Spindles per $100 Dollar Capital	No	30.7	51.2	66.8	
Ditto per Hand	"	22	62	182	
Ditto per Establishment	"				
Consumption of Cotton Cloth per head of Poputation	lbs	5.90	13.81	134	
Price of Cotton Cloth per Yard	CENTS	17	7		58.8
Operatives Wages per Week	DOLLARS	2.55	5.40	112	
RELATIVE.					
Purchasing Power of Wages operative over the products of his own labour		15	77.1	414	

(P.10)

For further evidence against the two theories under trial, let us study the movements of an important manufacturing industry in another country (United States) in its development between the years 1850 and 1880, or an interval of 30 years, as in the following table, prepared from certain statistics relating to the Cotton industry of the United States, quoted by Gunton (p 263, Principles of Social Economics) :—

(Table A.)

In the accompanying table we have the true cause of the recent fall of prices of commodities most clearly and unmistakably demonstrated. In 50 years the causes at work produced:—

(1.) A fall in the price of cotton cloth of 58·8 per cent.

(2) A rise in the nominal wages of the operatives of 112 per cent.

(3.) An increase of the real wages or purchasing power of the operatives over the product of their own industry of as much as 414 per cent.

Among the more important causes which effected these splendid economic advantages are :—

(1.) The reduction in cost of management by the concentration of the work in fewer but larger and better equipped establishments.

(2.) Improvements in machinery and other auxiliary aids to human labour enabling one hand to control 62 spindles, whereas formerly one hand could control only 22 spindles.

(3.) The effective producing power of each worker by such means was increased 3 7 fold, or nearly four-fold. That means that the labour of producing 1lb. of cloth per hand was reduced 73 per cent.

(4.) The price of cloth was, however, reduced only 58·8 per cent., but the difference of 14·2 per cent. is accounted for by being absorbed by the increase of 112 per cent. in the nominal wages of the operatives.

The "scarcity of gold" theory of the decline of prices cannot be reconciled with these plain facts, for the decline of 58·8 per cent. in cotton cloth is conjoined with an increase of 112 per cent. in the wages of the operatives. The fall of 58·8 per cent. in prices is likewise irreconcilable with the Ratio of Demand and Supply theory, for this remarkable fall

is associated with a growing intensity of real demand, the consumption of cotton cloth per head of population having gradually increased from 5·90lb. in the year 1830 to 13·81 in 1880, or an increase of 134 per cent. of real demand.

Cheapened cost of production—the true Primary Law of Economic Price—is the only theory which harmonises *with all the facts!* Theories like those already referred to (scarcity of gold or appreciation of gold, and Ratio of Demand and Supply), which can only at best be reconciled with a very small part of the facts, must be abandoned as unsatisfactory and altogether misleading. Indeed, when we look at the matter broadly and thoroughly, we must find conclusive evidence to show, in respect of commodities which can "be increased by the exertion of human industry," that supply is subordinate and depends upon demand. The breadth and intensity of the demand determines the breadth or intensity of the supply. The demand for commodities is the measure of the intensity of the need or desire to consume them. Gunton clearly puts it:—"To-day's wants determine to-morrow's efforts, and yesterday's actual consumption determines to-day's actual production. . . Since consumption constitutes the actual demand, and production the actual supply, it follows that demand is the cause (and measure) of the supply." And we might add that the cost of producing the supply is the Primary Law which determines its economic price.

Permanence of the Ratios or Equivalent Exchange Weights of Principal Commodities in Relation to Gold, and also to each other.

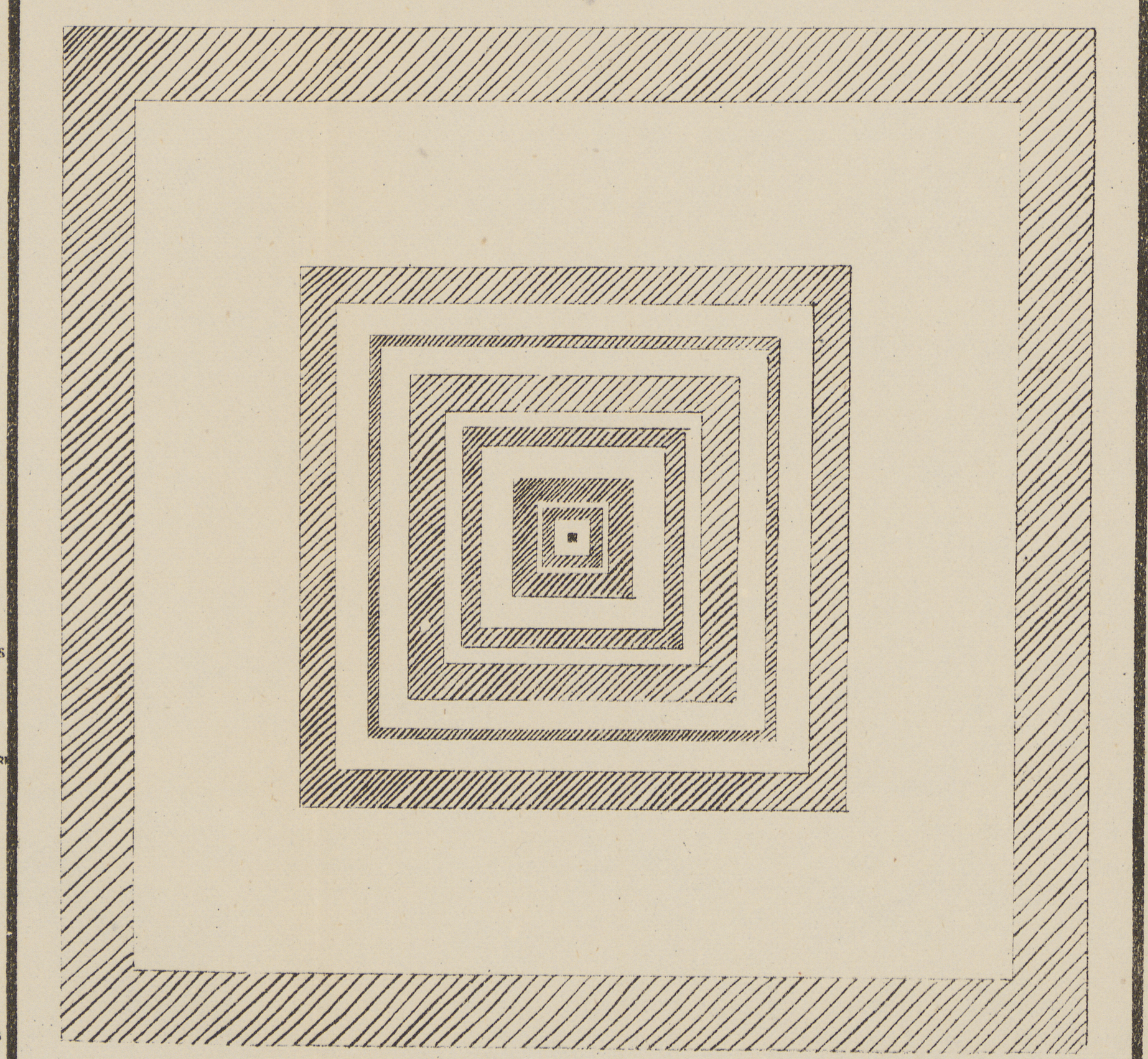
In civilised countries commodities of all kinds, by price lists, have their values equated to the established standard of value,—*gold*. In the United Kingdom the *sovereign* is the principal unit, and has been determined by law to consist of a specified weight (·25682 of an ounce, having $\frac{9166}{10000}$ purity) of the commodity gold, which is also used more extensively for other purposes than money. In general utility, and even in the magnitude of its value as an industrial product, gold is one of the most insignificant and almost the least valuable of all commodities which are requisite for man's use. Its utility is trifling as compared with wood, iron, or coal, and even though costly in relation to quantity or weight, its total value as one of the commodities produced annually by the principal civilised countries is as 19 to 12,507, or 0·15 per cent. of all industrial products.[a] In relation to the annual

a. See appended table showing value of different classes of industrial products

B^A

RELATIVE MAGNITUDE OF THE ECONOMIC VALUE

OF PRINCIPAL INDUSTRIAL PRODUCTS



TIN
COPPER
IRON
GOLD. SILVER
OTHER MINERALS

COAL
WINE
GARDEN PRODUCTS

DAIRY PRODUCTS

MEAT

GREEN CROPS. TRANSPORT

GRAIN

COMMERCE

AGRICULTURAL & PASTORAL PRODUCTS

MANUFACTURES

(P12)

B

Relative value of Products of Various Industries of the Principal Countries of the World.

1887-8	Mil £	Proportion per £ 10,000
Manufactures	4,618 *	3,692
Agricultural & Pastoral	3,948 †	3,157
Commerce	2,827	2,260
Transport	864	691
Mining	250	200
	12,507	10,000

Details		Proportion per £ 10,000
Manufactures	4,618	3,692
Commerce	2,827	2,260
Grain	1,091	872
Transport	864	691
Green Crops	859	687
Meat	608	486
Various agricultural Prodˢ	543	434
Dairy	401	321
Garden	259	207
Wine	187	150
Coal	131.2	105
Various Minerals	52	42
Silver	19	15
Gold	19	15
Iron	15	12
Copper	6	5
Lead	3.5	2.6
Tin	2.5	2.
Zinc	1.8	1.4
	12,507	10.000

* Cotton industry £ 281 mil:
† Wheat £ 543 mil:

value of all human services it is still more insignificant, as it is estimated to bear the ratio to them of 19 to 19,334, or 0·098 per cent. Apart from its great utility in barter as a means of facilitating exchanges, and its qualities of indestructibleness and portability, its principal utility is that of a common measure of the value of all other commodities. It is the established handy foot-rule for measuring the value of all other commodities and services, but its own value bears no more comparison in magnitude to the commodities of which it is the standard measure than does the sixpenny foot-rule of the builder or architect to the value of the costly fabric whose various dimensions have been determined by the useful but cheap foot-rule. It is necessary to bear this in mind, because there exists a superstitious idea, widely held, that the real element of economic value incorporated in the substance of gold (*i.e.*, the cost of human services engaged in procuring it) differs in some mysterious way from precisely the same kind of real economic value incorporated in potatoes or any other common commodity.

The magnitude of economic value in any commodity is not determined by its size or weight, nor by its abundance or scarcity, but by the average economic cost, at any time, of the useful services of man absorbed in its production, transport, modification, etc., and thereafter incorporated in the particular substance or commodity in the same way that mortgage title upon a valuable property incorporates the value of mortgagee's money investment.

If it can be shown, therefore, that the ratios of equivalent exchange weights of different commodities with gold and with each other are identical with the ratios of men's time and services absorbed in producing them, the major contention of my argument will be established, viz.:—*That cost of Production—(not the Ratio of Supply and Demand, nor mere abundance or scarcity)—is the Primary Law which determines and regulates Economic Price.*

The usual manner in which different commodities are quoted in price lists, in relation to money value, makes it difficult to realise their relative values to each other. Thus one commodity has its money value expressed in relation to a definite bulk, such as barrel, bushel, gallon. Another to different units of weight, such as ounce, pound, cwt., ton; and the services of man, use of property, money, etc., are always related to a measure of time, such as per hour, day, week, month, or year. Commodities, however stated, can be resolved into one quality common to them all, viz., weight, by which they may be perfectly equated in the relation of the ratios of equivalent weights to unit of value, *i.e.*, to £1, or,

what is the same thing, ·25682 of an ounce of ·916 pure gold. The following table has been constructed by me in this way, and embraces 28 of the principal commodities of English commerce, and representing the most important of all human industries.

(Table C.)

On examining the preceding table, the first thing that arrests attention is the great range of differences of the equivalent exchange weights of different commodities. Thus in 1893 1 ton of gold is shown as the equivalent of 22·23 tons silver; of 1,247 tons tin; of 1,344 tons copper; of 2,628 tons beef; of 7,158 tons sugar; of 7,520 tons lead; of 16,695 tons flour; of 136,000 tons salt; and of 348,636 tons of coal.

The most striking thing, however, shown in the figures relating to the two periods 1870 and 1893, is the permanence or persistency of their relative exchange weights with the central unit of their system—gold—and with each other.

Seeing that all the commodities (excepting their standard, which cannot of itself show variation) have been greatly affected by alteration of prices—some having risen by as much as 59 per cent. (salt), while the greater number of prices of commodities have fallen at various degrees from 4 to 46 per cent.—it is remarkable that the relative value-orbits—if we may coin a suitable phrase—only amount to an exhibition of greater or less eccentricity of orbit; and not (except in one or two instances where the values of commodities lie close to each other) to any disturbance of the original sequence in their order or weight distance from gold, or the centre of the system around which we may picture them as revolving as in the diagram which I have prepared to illustrate this very important law.

(Diagram I.)

THE TRUE LAW OF VALUE OR ECONOMIC PRICE ORBITS (CORRESPONDING WITH EQUIVALENT EXCHANGE WEIGHTS).

The true law of value or economic price orbits of various commodities relative to the centre of their system—the gold unit—have their equivalent exchange weight magnitudes primarily determined inversely in the exact ratio of their cost of production. That means that the greatness of the radial distance of the commodities from the central unit of value corresponds exactly with the corresponding smallness of cost of production relative to a common unit of weight. Thus the radius of the value-orbit of coal is very great as

C

Equivalent Exchange Weights

of Principal commodities in Years 1870 & 1893. Based on English market prices

Weight of different products yielded in Tasmania per hand.

Commodity	YEAR 1870 Relative Order No	YEAR 1870 Equivalent Exchange Weight	MEAN OF 1870 & 1893	YEAR 1893 Alteration in value since 1870	YEAR 1893 Relative Order No	YEAR 1893 Equivalent Exchange Weight	TONS YIELDED PER HAND PER YEAR IN TASMANIA BASED ON THE AVERAGE RESULTS OF TEN YEARS Actual Weight Tons	TONS YIELDED PER HAND PER YEAR IN TASMANIA BASED ON THE AVERAGE RESULTS OF TEN YEARS Corresponding Ratio
		TONS	TONS	per Cent		TONS		RATIO
Gold	1	1	1	—	1*	1	0.001405	1.
Silver	2	15.5	18.86	-30	2	22.32	0.032	22.75
Cotton Yarn	3	507	799	-44	6	1091		
Wool	4	666	946	-39	7	1227		
Tea	5	703	844	-43	3	985		
Tin	6	864	1055	-32	8†	1247	2.001 1.59 to 2.76	1424. 1131 to 1964
Butter	7	917	994	- 6	4	1070		
Cotton	8	1,203	1,707	-46	13	2212		
Copper	9	1,415	1,395	+ 5	9*	1344		
Tobacco	10	1,612	1578	+ 4	10*	1544		
Cheese	11	1,712	1940	-21	12†	2168		
Pork	12	1,728	2135	-35	15	2662		
Coffee	13	1,746	1442	+56	5	1139		
Hams	14	1811	1825	-12	11	1839		
Beef	15	2513	2570	- 4	14†	2628		
Herrings	16	4,351	4672	-13	17†	4934		
Sugar	17	4764	6141	-37	18†	7518		
Fish various	18	5,379	5014	+11	16†	4649		
Lead	19	5,431	6475	-30	19*	7520		
Flour wheaten	20	7,632	9433	-32	20*	11235		
Wheat	21	10,210	13,452	-39	21*	16,695	9.52	6776.
Steel rails	22	13,000	18447	-46	24†	23,895		
Iron bars	23	13,210	15,207	-33	23*	17205		
Potatoes	24	16,940	16,817	+ 1	22†	1677.5	40.8	29040.
Iron ore	25	56,890	107,535	-43	26†	158,150		
Salt	26	219,400	177,750	+59	25†	136,100		
Coal (pit mouth)	27	296,600	322,618	-17	27*	348.636	252.a 330b	179300 234800
Water supply	28	8,500,000$	8,500,000$	—	28*	8,500,000$		

* ..... Relative order in relation to Gold and other commodities undisturbed

† ..... " " " " " " scarcely altered

$ ..... Approximately

— ..... Indicates decrease in value relative to 1870

† ..... " increase " " " " "

a. Tasmanian average per man

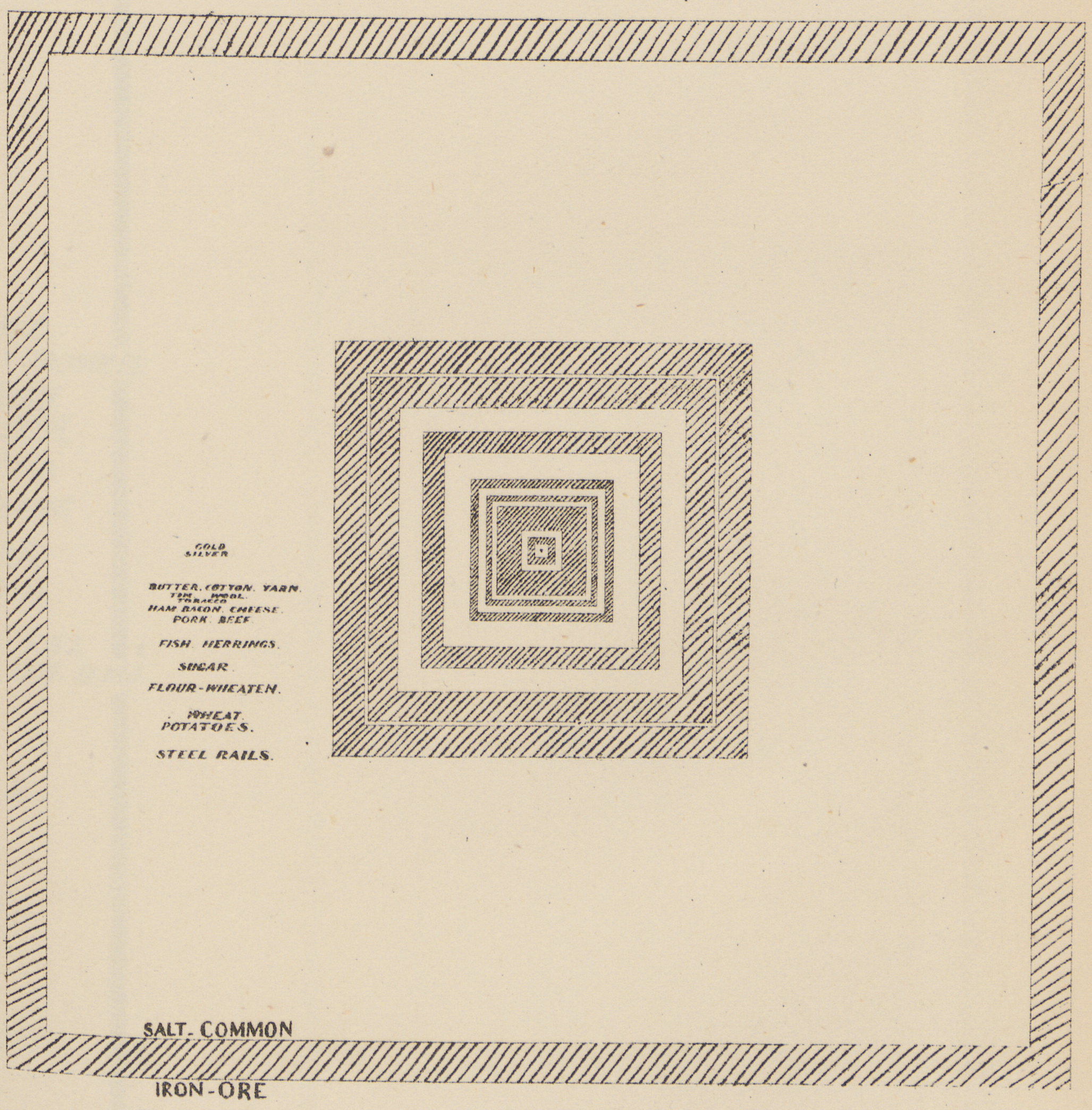
b. Average of English output per man

(P. 13)

WEIGHT EQUIVALENTS OF EXCHANGE PER STANDARD MONEY UNIT

CA

※ SOVEREIGN = 0·257 Oz: GOLD OF .916 degrees FINENESS
= 0.0000095610 TONS GOLD

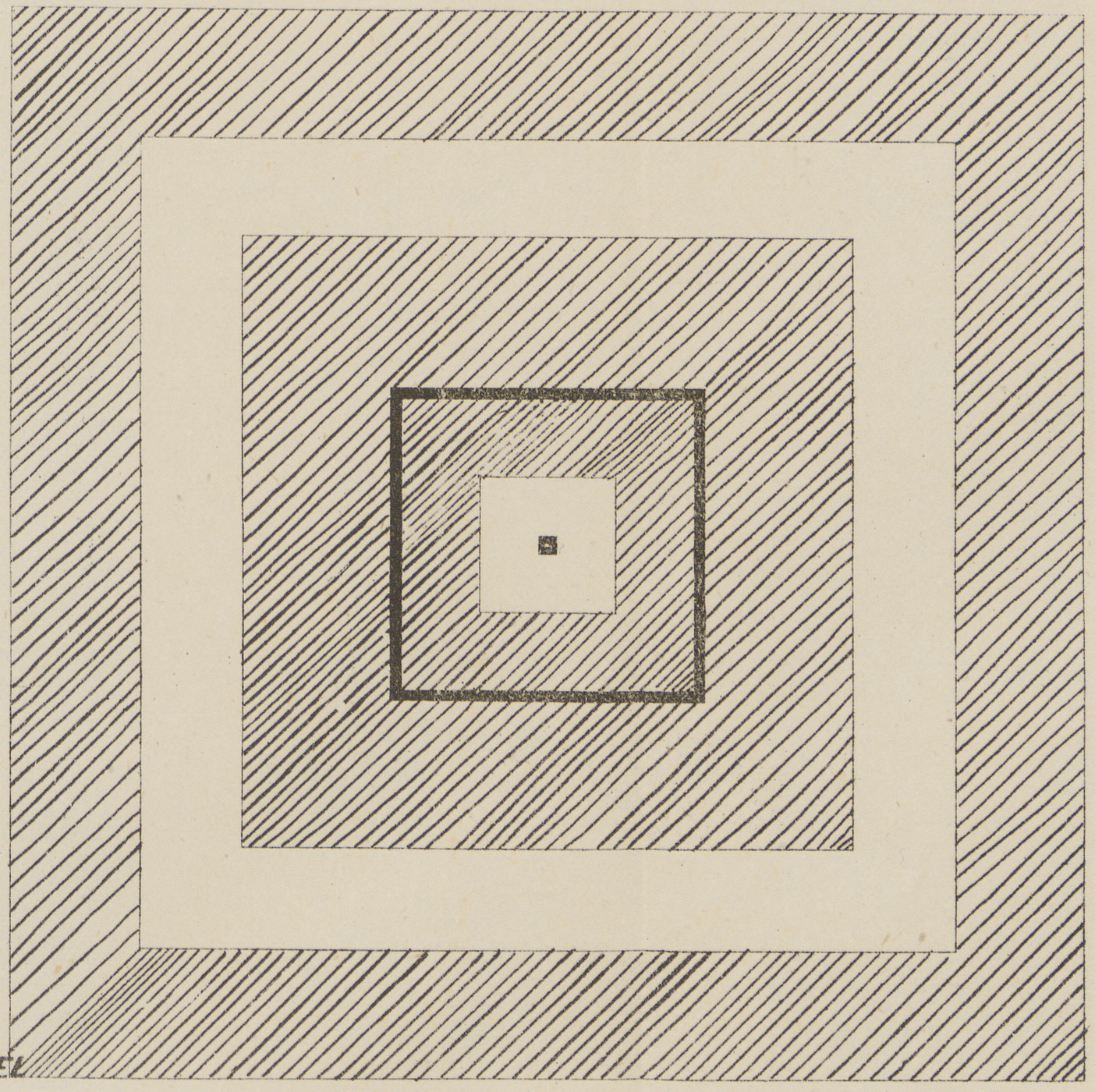


(P.13)

I

WEIGHT EQUIVALENT PER STANDARD UNIT OF LABOUR-TIME ⁂

(⁂ AN AVERAGE YEARS LABOUR OF ONE MAN)



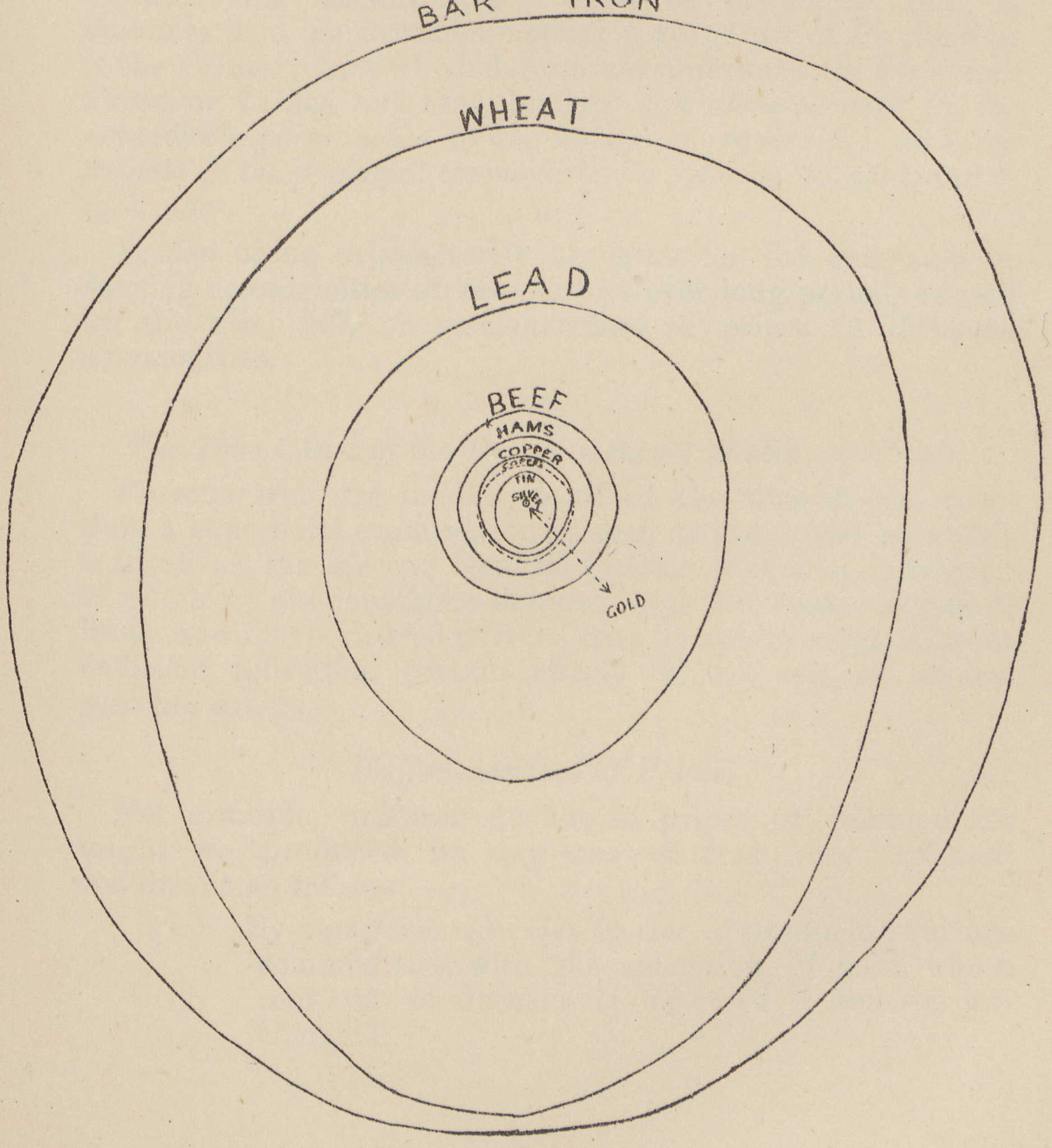
AVERAGE WEIGHT PRODUCED PER MAN PER YEAR TONS	
0.001405	GOLD
0.032	SILVER
2.001	TIN
9.46 : 9.52 10.78 : 11.18 : 11.18	OATS : WHEAT PEASE : BARLEY & BEANS
40.8	POTATOES
72.9	TURNIPS
124.07	MANGEL-WURZEL
252.0	COAL

(P.14)

VALUE ORBITS OF EQUIVALENCE OF VARIOUS COMMODITIES IN RELATION CENTRAL UNIT OF VALUE (GOLD) AND TO EACH OTHER

THE RESPECTIVE ECCENTRICITIES INDICATE THE DIFFERENCE OF PRICE-RANGE BETWEEN YEARS 1870 & 1893.

I^A



compared with the centre gold and with the respective value-orbits of silver, tin, wheat, and potatoes, because the experience of the producing industries of England and Tasmania during the last ten years proves that one *hand* during a year on the average can produce :—

ACTUAL.		EQUIVALENT RATIO TONS.
330	tons coal	234,800
0·001405	of a ton of gold	1
0·032	of a ton of silver	22·75
2·001	tons tin (metal)	1,424
9·52	tons wheat	6,776
40·8	tons potatoes	29,040

It is remarkable, notwithstanding the local differences of market prices and rates of current wages of the different industries, how closely the ratio of producing effort, taken inversely, agrees with the ratios of the selling prices in the English market. Any person who takes the trouble to examine this matter closely must be convinced that it amounts to a perfect demonstration that Cost of Production is the Primary Law which determines and regulates Economic Prices or Values, and that this law *can alone account for the remarkable permanence of the ratios of equivalent exchange weights of the principal commodities in relation to gold and to each other.*

It also alone satisfactorily accounts for the constancy or varying eccentricities of value-orbits over long periods caused by the rise, fall, or stationariness of prices of different commodities.

The True Cause of the Recent General Decline of Prices.

Persons who are unable to afford the time to give more than a superficial examination of such an important economic subject as the Recent General Decline of Prices in respect of which we are constantly deluged with the controversies of loose and inexperienced writers, may be apt to refer, without sufficient reflection, certain effects to one out of several possible causes.

Uniform decline of Prices.

For example, uniform decline of prices of commodities might be produced by any one of four very different conditions as follows :—

(1.) By a *uniform reduction* in cost of producing various commodities, with the exception of gold, whose cost of production is assumed to remain unchanged.

(2.) By cost of production *remaining unchanged* in regard to all commodities, excepting gold, whose cost of production had increased absolutely.

(3.) By a *uniform increase* in cost of production of various commodities, but associated with a still more marked increase in the cost of producing gold.

(4.) By a *uniform reduction* in the cost of producing various commodities, excepting gold, whose cost of production had declined at a lesser ratio.

(Diagram II.)

Now, whether we accept or reject one or other of these four possible causes, the relative purchasing power of commodity over commodity, excepting gold, would not be disturbed in the slightest degree. Even in respect of gold, it is only the industrial part which would be economically altered. The position reserved for money, by its appreciation, relatively, as in example 1 and 4, and absolute appreciation as in examples 2 and 3, would not in any way disturb their exchange values with each other in any way.

If nominal rates of wages and nominal profit fell uniformly, or rose uniformly with prices under all these differing conditions, the wage-earners' or investors' purchasing power would also be undisturbed, however higher or lower his nominal wages or rates of profit might be. But if nominal wages and nominal profits remain stationary while nominal prices fell generally, the industrial world would be greatly improved, because it would mean a real increase in the purchasing power of man's services. And as fully 70 per cent. of breadwinners buy commodities with services, not with commodities, we have no reason to doubt the largeness of the benefit to mankind from a general reduction of prices of commodities under such circumstances.

Any disturbance or depression of trade is therefore due to other well-understood economic causes, occurring periodically in cycles, and is in no way due to a general decline in prices.

Decline in Prices, Not Due to Absolute Appreciation of Gold.

Although there is a very marked decline in recent years in the prices of commodities, the rate of decline is far from being uniform in respect of different commodities.

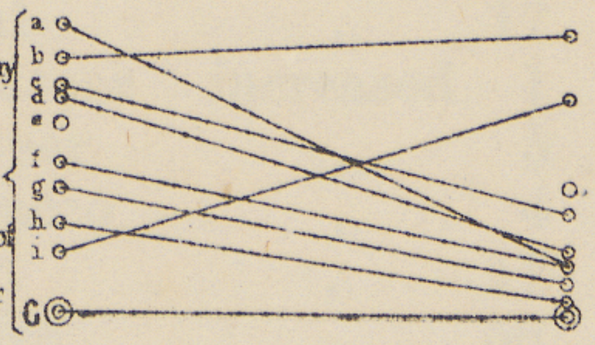
II

ILLUSTRATIONS SHOWING THAT
SIMILAR RELATIVE EFFECTS
May be produced by
VERY DIFFERENT CAUSES

Fac p. 94

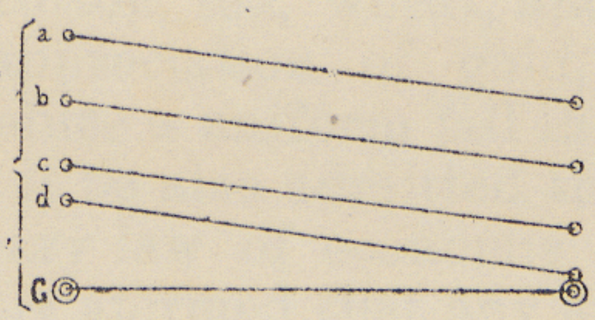
PURCHASING POWER OF GOLD	REFERENCE:- G. *indicates Gold* a.b.c.d &c .. *other commodities* — EXAMPLES —	PRICES OF OTHER COMMODITIES

I P.P. increased . lowered or stationary accordingly as prices of other commodities, have fallen, risen or remained stationary, its own cost of production remaining stationary or unchanged .



Some increasing irregularly a few stationary the larger number falling irregularly. P.Power over Gold & with each other varying as the prices vary & as the cost of production .

II Cost of Production Remaining Stationary Increased Purchasing Power over other commodities



Falling Uniformly relative to Gold Purchasing Power over each other unchanged owing to cost of production having fallen uniformly in all industries

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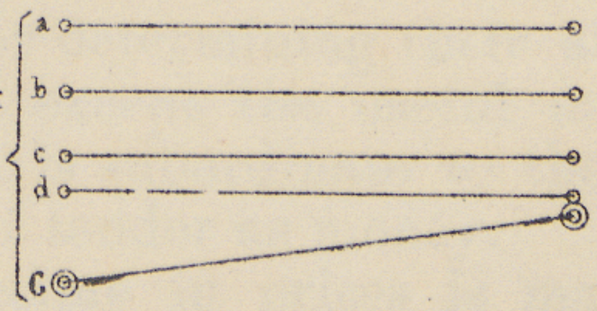
III Appreciated or Increased P.Power owing to increased cost of production .



Produces the same results as indicated by example **II** but owing to cost of production remaing unchanged in all industries

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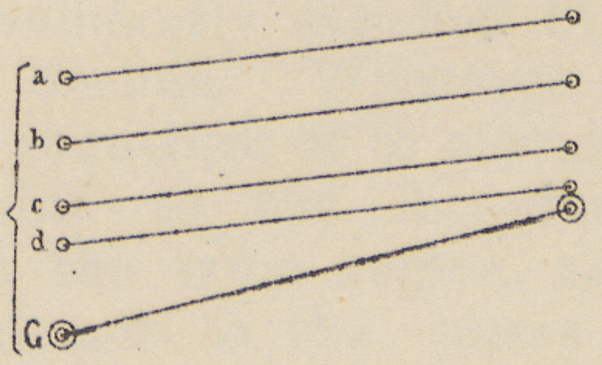
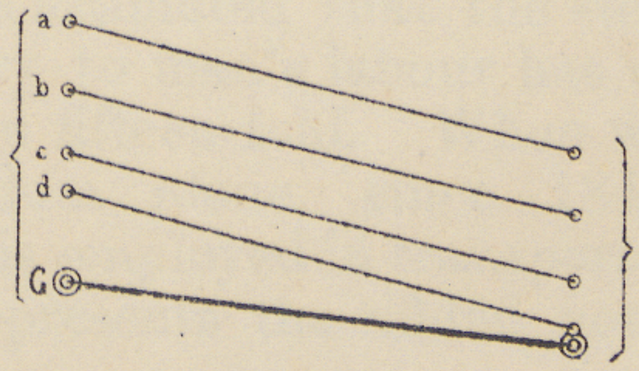
IV Greatly appreciated P.Power owing to a correspondingly great increase in cost of production



Produces the same results as indicated by example **II** but owing to cost of production having uniformly risen in all industries but with a smaller intensity than the current rise in the cost of production of Gold .

V Appreciated or Increased P.Power even with reduction in cost of production



Produces the same results as indicated by example **II** but owing to cost of production having uniformly fallen in all industries but at greater rate of intensity than in the con-current fall in cost of production of Gold .

G. Whitlock sc.

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Thus, between 1873 and 1893,

The price of	Steel Rails	declined	46	per	cent.
,,	,, Cotton	,,	46	,,	
,,	,, Tea	,,	43	,,	
,,	,, Wheat	,,	39	,,	
,,	,, Sugar	,,	37	,,	
,,	,, Beef	,,	4	,,	
,,	,, Butter	,,	6	,,	
,,	,, Coal	,,	17	,,	
,,	,, Potatoes	increased	1	,,	
,,	,, Copper	,,	5	,,	
,,	,, Tobacco	,,	4	,,	
,,	,, Fish	,,	11	,,	
,,	,, Coffee	,,	56	,,	
,,	,, Salt	,,	59	,,	

This demonstrates that the fall in price of important articles, such as rails, cotton, tea, wheat, and sugar, cannot be due to the alleged appreciation of gold, for the latter cause would tend to produce a uniform fall in all prices.

If this be true, and if it be also admitted that cost of production is the true primary law of economic value or price, then it may be confidently affirmed that any attempt made by governments to fix arbitrary laws for determining the relative exchange values of any two commodites—such as gold and silver as in the scheme of bi-metallism—would be as futile as to pass arbitrary laws for determining their absolute specific gravities. Of course, I except the useful *token* relation of silver to gold, where one is subordinate to the unit standard, and limited in amount of tender as money.

The true cause of decline in prices is mainly due to the increasing improvements in steam, chemistry, electricity, and labour-saving machinery and forces, whereby man's labour is year by year made more effective, his reward is made greater, and his wants more abundantly satisfied in proportion as prices of commodities decline. Whatever local injury is now done to particular countries, or to particular industries in any one place, is due to the introduction of more favoured competitors in the same region, or in the same branch of industry, and not to the causes which are so frequently alleged. As a single example of the wonderful advantage to the effectiveness of man's labour by the introduction of labour saving forces and machinery, let us take the case of steam. It is estimated that the steam force now employed as an auxiliary to man's labour has multiplied the original power more than fifteen fold. When we realise that in the United Kingdom alone, since 1840, 8,600,000 additional horse-power is employed in transport, and in other industrial directions, represents the added nominal force of

103,000,000 of workmen, or fully six times the working force of all breadwinners in the United Kingdom, need we be surprised to find that even the effective power of the agricultural labourer, who is not so highly benefited as the artisan class, has been increased 42·93 per cent., and that fewer hands, therefore, are now required to cultivate each acre. Ought we not to expect, also, as we find it to be, that the new facilities must have immensely cheapened transport and cost of production; raised wages and purchasing power; increased the average consumption; and greatly improved the standard of living of the labourer. By such improved conditions, the United Kingdom is now better enabled to employ, feed, clothe 38 millions than in the year 1841, when there were 10 millions less to employ, feed, and clothe.

Conclusion.

In conclusion, I may be permitted to quote the following interesting passage from the author of "RECENT ECONOMIC CHANGES" (David A. Wells), who is acknowledged to be one of our most distinguished economists, in order to show that my own opinions are in harmony with those of the most advanced economic writers of the day. Mr. Wells, in his concluding summary of "The Single *versus* the Double Standard," states: "To comprehend the phenomenal reduction in the prices of the world's great staple commodities which has taken place in recent years, it is essential to *look for and consider more potent and extensive causes than any variation in the volume or relative values of the money metals*, great as they may have been."

Mechanical and chemical appliances have been invented, developed, and applied for the production and distribution of commodities within the last quarter of a century, which prior to that time had hardly formed the subject of rational speculation. The prime object of all these inventions and discoveries, *the great stimulus that led to their realisation, was to Cheapen cost, or, what is the same thing, reduce prices.* And the measure of the value of any new industrial method, invention, discovery, appliance, or development is the extent to which these results are effected by it.

Thus, the "prices of cloth fell when the spinning-wheel and the hand-looms were superseded; the price of travelling when steam superseded horses and the power of the wind. The prices of all the world's great staple commodities fell when steam connected the chief sources of their supply with the market places of all nations, and made possible the wide distribution of perishable products. The prices of all things, again fell *pari passu*, with the growth of financial iustitutions established to create the supply and use of metallic money."

"The investigations of Mr. Atkinson show that 'while one-half the present effort to sustain life consists in the effort or cost of obtaining food, that effort, great as it still is, is so much less than it was prior to 1860 as to make it almost incapable of expression in specific terms. In 1860, the greater part of the wheat now consumed in Europe could not have been moved a hundred and fifty miles without exhausting its value; now wheat is moved half-way round the world at a fraction of its value.' The preservation of food by artificial methods, which to an extent is equivalent to its increase supply, has also been to a very high degree perfected."

"In the production of materials for clothing, vast areas of new territory have been added to areas formerly occupied for the production of cotton and wool; while, in the case of cotton, the change from slave labour to free labour alone has greatly reduced its cost of production in that country whose supply determines the price for the world. 'In the conversion of cotton and wool into fabrics it can be proven that one factory operative can do four times the work that one corresponding operative could accomplish between the years 1840 and 1850; while the invention and application of the sewing-machine has reduced the time and labour cost necessary for the conversion of cloth into clothing in vastly greater measure.'"

"In the case of the useful metals, iron, steel, copper, lead, tin, and quicksilver, the revolution which has occurred in consequence of the discovery and opening up of new mines, the application of new methods of smelting, and the facilities for transportation *at low cost*, have unquestionably reduced the cost (price) of all these products to as great an extent as that of any other class of commodities."

Mr. Wells then concludes his argument as follows:—

"To suppose, now, that a change in the relative value of the two precious metals—gold and silver—a change which has not in any degree restricted their natural supply or diminished their monetary or industrial uses, has exercised a concurrent superior and predominating influence in respect to the prices of all other commodities, or services, would seem to be almost incompatible with the clear exercise of one's reasoning faculties."

I am glad to be be in complete accord with the views so admirably set forth by Mr. Wells, and I am, at the same time, fully convinced that any cause which tends to check the influences which have beneficially cheapened commodities to consumers, also tends to check the world's progress in material welfare.